

APPENDIX A

BORING LOGS


LOCKWOOD AVENUE PROPERTY

BORING LOG FOR: RAYMARK – OU3- FERRY CREEK
 PROJECT NO.: N7491-0320
 LOGGED BY: KAYLEEN JALKUT
 DRILLED BY (Company/Driller): ATL / Mike Hawkins
 GRD. SURFACE 8.0 Ft.

TRANSCRIBED BY: FMD
 ELEVATION FROM: Est. from topo. map

BORING NO.: B2-SB01
 START DATE: 8-4-97
 COMPLETION DATE: 8-4-97
 MON. WELL NO.: NA
 CHECKED BY: TD

DEPTH (FEET)	BLOW S PER 6"	SAMP REC. / SAMP LENG. (ft)	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L (ft)	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA METHOD = [FID PID]	
0											
	1/12	15 /	OU3-B2-SB1-0002 1200 S-1			Brown Black	SILT -mostly silt, trace fine sand, large stems (organic), pot. asbestos tiles/boards, roots	ML	Damp, pot. asbestos gray fiber boards/pads (fill)	0	2.4
2'	1/12	24									
	1/12	16 /	OU3-B2-SB1-0204 1210 S-2			Brown Black	Similar to above w/more twigs, roots, pot. asbestos pads	ML	Damp, pot. asb. (fill)	0	3.1
4'	1/12	24									
	1/12	16 /	OU3-B2-SB1-0406 1220 S-3			Brown	Similar to above w/pot. asbestos pad, organics, fewer twigs, more roots	ML	Damp, pot. asb. - finer org. veg tissue, sea shells	0	3.4
6'	1/12	24									
	1	24 /	OU3-B2-SB1-0608 1225 S-4			Black	S-4A SILT w/org. fibers, trace fine sand, pot. asbestos boards	ML	Damp fill	37.4	10
8'	24	24				Brown	S-4B PEAT-fibrous org. tissue, roots	PT	Saturated-water squeezed out of peat soil holding H ₂ O	157	13.6
	WOH	23 /	OU3-B2-SB1-0810 1230 S-5			Brown	SILT/PEAT - mostly silt w/peat like fibrous tissue, roots, stems and pot asb. fiber board (gray)	ML/PT	Damp holding onto H ₂ O	16.0	8.7
10'	WOH	24									
	WOH	24 /	OU3-B2-SB1-1012 1235 S-6			Brown	SILT - mostly silt, trace fine sand, pot. asb. pads, roots, twigs fibers (plant)	ML	Damp, pot. asbestos, soft	56.2	30.3
12'	WOH	24									
	WOH	24 /	OU3-B2-SB1-1214 1245 S-7			brown	SILT - similar to above - no visible asbestos, fewer org. fibers than above, trace fine sand	ML	Damp	122	62
14'	WOH	24									
	WOH	24 /	OU3-B2-SB1-1416 1250 S-8			brown	SILT - similar to above, few org. fibers, tr. fine sand	ML	Damp - no visual asbestos soft	59.1	26.2
16'	1/12	24					EOB @ 16"				

TYPE OF DRILLING RIG:	CME-850 ATV TRACK MOUNT	
METHOD OF ADVANCING BORING:	4.25" I D HSA, 8" O.D. HSA	
METHOD OF SOIL SAMPLING:	3" BARRELS DROPPED W/300 LB HYDRAULIC HAMMER IN 18IN	
METHOD OF ROCK CORING:		
GROUNDWATER LEVELS:	NO WATER IN AUGERS @ 1305, BACKFILL W/BENT. SLURRY	
OTHER	LEVEL C-S-2 TO S-8 DRILLING 0-16" BACKFILL POT. ASB. IN THE MORE SILTY LAYERS VERSUS THE PEAT LIKE LAYERS	BORING NO.: B2-SB01 PAGE: 1 OF 1

BORING LOG FOR:

RAYMARK – OU3- FERRY CREEK

PROJECT NO.:

N7491-0320

LOGGED BY:

KAYLEEN JALKUT

TRANSCRIBED BY:

FMD

DRILLED BY (Company/Driller):

ATL / MIKE HAWKINS

BORING NO.:

B2-SB02

START DATE:

8/1/97

COMPLETION DATE:

8/1/97

GRD. SURFACE

10.5 ft.

ELEVATION FROM:

Est. from. topo. map

MON. WELL NO.:

CHECKED BY:

TD

DEPTH (FEET)	BLOW S PER 6"	SAMP REC. / SAMP LENG. (ft)	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L (ft)	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA METHOD = [FID PID]	
0	1	18 / 24	OU3-B2-SB02-0002			brown	Silty SAND-mostly fine sand, some silt, trace. twigs, roots, plant fibers	SM	Dry, Crumbly, Loose	0	0.3
	1										
2'	1		1115 S-1								
	2	12 / 24	OU3-B2-SB02-0204			brown	silty SAND, fine sand, silt, trace organic fibers, trace asphalt shingles, pot. Asbestos fibers (?)	SM	Oxidized-like staining Fill, Dry	0	0.4
	4										
4'	5		1120 S-2								
	5	19 / 24	OU3-B2-SB02-0406			brown-black	Silty SAND, fine sand, silt, asphalt shingles, black crumbly waste material, pot asbestos tiles twigs,	SM	Dry, Upgrade 1130-Fill	0	0
	2						Roots				
6'	1		1130 S-3								
	2	21 / 24	OU3-B2-SB02-0608			brown-black	Silty SAND-similar to above w/pot asbestos tiles, asphalt shingles, vitrified clay pipe, twigs, roots	SM	Damp Fill	0	0
	3										
8'	3		1140 S-4								
	2	10 / 24	OU3-B2-SB02-0810			black	SILT w/tr. fine sand, plastic sheets (flexible) non-flexible plastic sheets, asphalt shingles, asbestos like hairs, organic hairs, twigs	SM	Saturated Fill	0	0
	1								Jet black waste coloration		
10'	1		1150 S-5								
	1	24 / 24	OU3-B2-SB02-1012			brown-black	S-6A (0-17") - SILT w/org. fibers, pot-black man-made waste material, shingles	SM/ OL?	Damp Fill	60	8
	2						S-6B (17-24") asphalt shingles w/silt	SM/ FILL		120	10
12'	4		1200 S-6								
	9	8 / 24	OU3-B2-SB02-1214			black	FILL - asphalt-like shingles, tr.-silt pot. cardboard fibers in shingles	SM/ FILL	Damp	0	0
	4										
14'	2		1210 S-7								
	1	24 / 24	OU3-B2-SB02-1416			brown-black	S-8A (4in) org SILT w/large fibers (plant) stems, trace Shingles	OL/ FILL	Saturated	0	0
	1										
16'	2		1218 S-8				S-8B (4-24) - SILT w/tr. fine thin plant fibers tr. fine sand	SM	Saturated	0	0

TYPE OF DRILLING RIG:

CME 850 ATV TRACK MOUNT

METHOD OF ADVANCING BORING:

4.25' I D HAS, 8 in. O.D. HSA

METHOD OF SOIL SAMPLING:

3 IN BARREL 300 LB HYDRAULIC HAMMER 18 INCH DROP

METHOD OF ROCK CORING:

GROUNDWATER LEVELS:

WATER @ 12.10 IN AUGERS AGS

OTHER OBSERVATIONS:

UPGRACE TO C @ 1130 HRS, DRILL CREW DOWNGRADES 1120 FOR BREAK RESUME C @ 1230 - 1300

BORING NO.:

B2-SB02

Tetra Tech NUS, Inc.




PAGE: 1 OF 1

BORING LOG FOR: RAYMARK – OU3- FERRY CREEK
 PROJECT NO.: N7491-0320
 LOGGED BY: KAYLEEN JALKUT
 DRILLED BY (Company/Driller): ATL / MIKE HAWKINS
 GRD. SURFACE 8.5 FT.

TRANSCRIBED BY: FMD
 ELEVATION FROM: EST. FROM TOPO. MAP

BORING NO.: B2-SB03
 START DATE: 7/31/97
 COMPLETION DATE: 7/31/97
 MON. WELL NO.:
 CHECKED BY: TD

DEPTH (FEET)	BLOW S PER 6"	SAMP REC. / SAMP LENG. (ft)	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L (ft)	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA METHOD = [FID PID]	
0	1	17	OU3-B2-SB03-0002			brown	SILT, trace fine sand, roots, grasses, organic fibers	SM	Loose, dry, crumbly	0	*
	1										
2'	1		1500 S-1								
	1	16	OU3-B2-SB03-0204			brown	SILT, trace fine sand, some organic fibers, roots, trace Brick-like material, twigs	SM	Dense Dry Fill	0	*
	1										
4'	2		1510 S-2								
	2	9	OU3-B2-SB03-0406			black	SILT, trace fine sand, some organics, grass, roots, twigs, Stems, asphalt-like shingles	SM	Sheen on most shingles moist soil fill	16.2	*
	2										
6'	1		1515 S-3								
	2	24	OU3-B2-SB03-0608		v-soft	black	S-4A (0-7") SILT, w/organics, white specs-sea shells? Roots	SM or OL?	Moist soil holding water white specs may be from shingles, strong organic odor	125	*
	2				dense or stiff	Brown- black	S-4B (7-24") PEAT, fibrous laden root system	PT			
8'	1		1522 S-4								
	2	24	OU3-B2-SB03-0810			brown	PEAT, some silt, fibrous root system Trace white specs (?)	PT	moist soil holding water strong methane like org.	32	*
	WOH								odor		
10'	WOH		1530 S-5								
	WOH	24	OU3-B2-SB03-1012		Soft-	black	S-6A (0-15") PEAT and SILT w/organics	OL/ PT	moist soil holding H ₂ O strong organic odor	220	*
	WOH				v-soft	Brown- black	S-6B (15-24") SILT, trace organics trace fine sand	SM	Moist		
12'	WOH		1537 S-6								
	WOH	24	OU3-B2-SB03-1214		soft	brown- black	S-7 = SILT, trace organics, tr. fine sand	SM	holding water moist in Soil	133	*
	WOH										
14'	WOH		1545 S-7								
	WOH	24	OU3-B2-SB03-1416			black	S-8 = SILT, trace organics, tr. fine sand	SM	Very soft in one 4-in interval-saturated-rest	42	*
	WOH								is damp-strong organic Odor		
16'	1		1553 S-8								

TYPE OF DRILLING RIG:	CME 850 ATV TRACK MOUNTED	Tetra Tech NUS, Inc. 
METHOD OF ADVANCING BORING:	4.25 in. I.D./8 in. O.D. HSA	
METHOD OF SOIL SAMPLING:	3 IN BARREL 300 LB HYDRAULIC HAMMER 18 INCH DROP	
METHOD OF ROCK CORING:		
GROUNDWATER LEVELS:	WATER @ 12.8 IN AUGERS AGS	
OTHER OBSERVATIONS:	AUGERS TO 14' * BATTERY CRITICALLY LOW	
BORING NO.: B2-SB03		PAGE: 1 OF 1

BORING LOG FOR:

RAYMARK – OU3- FERRY CREEK

PROJECT NO.:

N7491-0320

LOGGED BY:

KAYLEEN JALKUT

TRANSCRIBED BY:

FMD

DRILLED BY (Company/Driller):

ATL / MIKE HAWKINS

BORING NO.:

B2-SB04

START DATE:

7/31/97

COMPLETION DATE:

7/31/97

GRD. SURFACE

7.0 Ft.

ELEVATION FROM:

Est. from topo. map

MON. WELL NO.:

CHECKED BY:

TD

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG. (ft)	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L (ft)	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA METHOD = [FID PID]	
0											
	1	19	OU3-B2-SB04-0002			brown	SAND - fine sand, tr. silt, roots, glass pieces, concrete, debris, asphalt, twigs, tr. coarse gravel, poorly graded	SP	Loose, dry, fill	0	0
	2										
	4										
2'	4	24	1258 S-1							0	0
	3		OU3-B2-SB04-0204			brown	- similar to above w/glass shards, chunks wood red cloth	SP	Loose dry, fill		
	4										
4'	2	24	1309 S-2							60	0
	1		OU3-B2-SB04-0406			Brown-Black	SILT w/organics, tr. fine sand, tr. gravel, peat-like fibers, roots, twigs	OL/PT	Moist/Damp		
	1										
6'	1	24	1315 S-3							23	0
	WOH		OU3-B2-SB04-0608			Brown	S-4A (0-9in) SILT-similar to above, less org., glass Chunks	OL	Damp		
	1								Fill		
8'	2	24	1320 S-4			Gray-Brown	S-4B (9-24in) SILT w/fine to med. sand and tr. organics fibers, roots	SM	Damp	10	0
	1		OU3-B2-SB04-0810			Black	S-5A (0-4") SILT w/tr. fine sand, some org fibers, stems, twigs, roots	SM	Damp		
	3										
10'	3	24	1330 S-5			Gray-brown	S-5B (4-18") SAND, some gravel – mostly f/m sand, coarse subrounded gravel, poorly graded tr. coarse sand, tr. silt	SP	Loose, wet	26	0
	2		OU3-B2-SB04-1012			brown	SAND- mostly f/m, tr. coarse sand, tr. fine subrounded gravel, tr. silt, no bedding or structures	SP	saturated loose no fill		
	2										
12'	2	24	1340 S-6							0	0
	1		OU3-B2-SB04-1214			brown	SAND - similar to above, no gravel	SP	saturated loose no fill		
	2										
14'	2	24	1350 S-7							0	0
	2		OU3-B2-SB04-1416			brown	SAND - similar to above w/coarse sand and tr. coarse gravel at base of spoon	SP	saturated loose no fill		
	3										
16'	4	24	1400 S-8				EOB @ 16' AUGERS TO 14'				

TYPE OF DRILLING RIG:

CME 850 ATV TRACK-MOUNTED.

METHOD OF ADVANCING BORING:

4.25' I.D. HSA 8 IN. O.D. HSA

METHOD OF SOIL SAMPLING:

3 IN BARREL 300 LB HAMMER 18 INCH DROP

METHOD OF ROCK CORING:

GROUNDWATER LEVELS:

WATER IN AUGERS @ 6.20 FT BGS

OTHER OBSERVATIONS:

Tetra Tech NUS, Inc.



BORING NO.: B2-SB04


PAGE: 1 OF 1

BORING LOG FOR: RAYMARK – OU3- FERRY CREEK
PROJECT NO.: N7491-0320
LOGGED BY: KAYLEEN JALKUT
DRILLED BY (Company/Driller): ATL MIKE HAWKINS
GRD. SURFACE 2.5 FT.

TRANSCRIBED BY: FMD
ELEVATION FROM: Est. from topo. map

BORING NO.: B2-SB05
START DATE: 7/30/98
COMPLETION DATE: 7/30/98
MON. WELL NO.:
CHECKED BY: TD

DEPTH (FEET)	BLOW S PER 6"	SAMP REC./ SAMP LENG. (ft)	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L (ft)	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA METHOD = [FID PID]	
0											
	1/12 in	18 / 24	OU3-B2-SB5-0002			brown	S-1 (0-8in) organic SILT w/ fine sand (trace) - large phragmite stems, grass, roots, twigs, org. (some)	OL/PT	3 in. recov. initial - relocated 2nd spoon w/recov., v. soft (2 spoons), damp	0	2.9
2'	1/12 in		1320 S-1								
	WOH	3 / 24	OU3-B2-SB5-0204			brown	S-2 (0-3) organic SILT - similar to above	OL	Empty initially – retrieved barrel + spoon not much v. soft damp	0	2.6
4'	WOH		1330 S-2								
	WOH	0 / 24	OU3-B2-SB5-0406				S-3 No Recovery		No recovery		
6'	WOH		1340 S-3								
	WOH	9 / 24	OU3-B2-SB5-0608			Black	S-4 (0-9in) similar to S-2 w/ manufactured waste (sludge-like paste) and organics	OL/ FILL	Potential fill w/ glass like fibers - pot. asbestos, v. soft (wet)	0	2.8
8'	WOH		1345 S-4								
	WOH	6 / 24	OU3-B2-SB5-0810			Black	S-5 (0-6) similar to S-4	OL/ FILL	More fill, very soft wet	0	3.2
10'	WOH		1350 S-5								
	WOH	10 / 24	OU3-B2-SB5-1012			Black	S-6 (0-10) similar to above w/ more fine sand and pot. asbestos waste - hair like material	OL/ FILL	No basket used to try and get more recovery, wet	0	13.3
12'	WOH		1400 S-6				black pot. manufactured waste				
	WOH	12 / 24	OU3-B2-SB5-1214			Black	S-7 (0-12) SILT, some fine sand trace fine organic fibers	SM	No waste observed	0	0.2
14'	WOH		1420 S-7								
	WOH	24 / 24	OU3-B2-SB5-1416			black	S-8 (24 in) organic SILT, trace fine sand, organic fibers, twigs	OL? SM?	No visible waste, soft to v. soft wet	0	0.3
16'	WOH		1430 S-8				EOB @ 16'				

TYPE OF DRILLING RIG:	CME-850 TRACK MOUNTED ATV RIG	
METHOD OF ADVANCING BORING:	4.25' I D HSA 8 in OD Has	
METHOD OF SOIL SAMPLING:	3 IN. SPLIT-SPOON DRIVEN WITH A 300 LB. HAMMER W/18 IN. DROP	
METHOD OF ROCK CORING:		
GROUNDWATER LEVELS:	NO WATER IN BORING @ 1435 HRS	
OTHER OBSERVATIONS:		
BORING NO.: B2-SB05		PAGE: 1 OF 1

BORING LOG FOR: RAYMARK – OU3- FERRY CREEK
 PROJECT NO.: N7491-0320
 LOGGED BY: KAYLEEN JALKUT
 DRILLED BY (Company/Driller): ATL / MIKE HAWKINS
 GRD. SURFACE 3.0 FT.

TRANSCRIBED BY: FMD
 ELEVATION FROM: Est. from topo. map

BORING NO.: B2-SB06
 START DATE: 7/31/97
 COMPLETION DATE: 7/31/97
 MON. WELL NO.:
 CHECKED BY: TD

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA METHOD = [FID PID]	
	1/12 IN.	6	OU3-B2-SB6-0002			brown	Fibrous, organic, root mat, twigs		Difficult to recover - twigs, vegetation in way of	0	0
2	W.O.H.	24	0850 S-1						sample capture. Damp.		
	W.O.H.	8	OU3-B2-SB6-0204		Very Soft	brown	Org. SILT – mostly silt, organic fibers,	OL	Saturated	2.2	0
4	W.O.H.	24	0856 S-2				TR fine sand				
	1	15	OU3-B2-SB6-0406			Gray- brown	S-3A (0-9") gravelly SAND - f/c sand, coarse gravel, Well graded, loose	SW	Saturated, seashells Loose	9.2	15.4
6	2	24	0900 S-3		Soft	brown	S-3B (9-24") SILT, tr. fine sand, tr. organic fibers	SM ML (?)	Damp	1.1	10.1
	1	9	OU3-B2-SB6-0608			Gray- brown	S-4 gravelly SAND - similar to S-3A	SW	Saturated, loose	0	8.1
8	1/12 IN.	24	0910 S-4								
	1	19	OU3-B2-SB6-0810			brown	S-5 gravelly, silty, SAND w/ organic fibers - f/c sand, trace coarse gravel, some silt,	SM	Saturated, loose	0	10
10	1	24	0916 S-5								
	1	13	OU3-B2-SB6-1012			brown	S-6 sandy SILT, tr. gravel, f/m sand, tr. coarse gravel, tr. clay	SM	More silt than sand Saturated, loose	0	12.4
12	2	24	0925 S-6								
	3	24	OU3-B2-SB6-1214			brown	S-7A (0-12 in) sandy SILT, some gravel & f/m sand	SM	More gravel than in S-6 Saturated	0	6.4
14	5	24	0935 S-7			Gray- brown	S-7B (12-24 in) gravelly SAND, tr. silt, f/c sand & coarse gravel	SW	Fighting running sand. Sand up to 20 in. in flights		
	4									0	7.8
							EOB @ 14' W/SPOON @ 12' W/AUGER				

TYPE OF DRILLING RIG: CME-850 TRACK-MOUNTED ATV RIG.
 METHOD OF ADVANCING BORING: 4.25' I D HSA 8" OD
 METHOD OF SOIL SAMPLING: 3 IN. BARREL 300 LB HAMMER (HYDRAULIC) DROP 18 IN
 METHOD OF ROCK CORING: N/A
 GROUNDWATER LEVELS: NO WASTE OBSERVED. WATER 2.70 FT BGS W/INDICATOR IN AUGER
 OTHER OBSERVATIONS: BACKFILL W/ BENTONITE SLURRY

BORING NO.: B2-SB06

Tetra Tech NUS, Inc.



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BORING LOG FOR: RAYMARK – OU3- FERRY CREEK
PROJECT NO.: N7491-0320
LOGGED BY: KAYLEEN JALKUT
DRILLED BY (Company/Driller): ATL / MIKE HAWKINS (ATL)
GRD. SURFACE 6.0 ft.

TRANSCRIBED BY: MES
ELEVATION FROM: Est. from topo. map

BORING NO.: B2-SB07
START DATE: 7/30/97
COMPLETION DATE: 7/30/97
MON. WELL NO.:
CHECKED BY: TD

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA METHOD = [FID PID]	
0											
	1	14	OU3-B2-SB07-0002			Brown	SAND – poorly graded f/m, trace silt, trace coarse gravel, grass roots, 1 piece wood	SP	Dry – top soil, loose	0	
	1										
2	1										
	2	24	0800 S-1								
	1	17	OU3-B2-SB07-0204	2'		Gray-Brown	SAND, some silt, trace coarse gravel (F/M sand, tr. coarse sand, trace roots)	SP-SM	Dry, tighter than above	0	
	1										
4	1	24	0810 S-2								
	1	24	OU3-B2-SB07-0406			Brown	S-3A (0-7in) SAND f/m poorly graded sand , loose roots	SP	Damp, oxidized (red stain), damp	0	
	1										
6	1	24	0820 S-3			Black	S-3B (7-14") org SILT ,fine gray sand w/ (1/4 thick) laminations low plasticity	OL		0	
	1	24	OU3-B2-SB07-0608			Brown black	S-4A (0-5in) org SILT w/ fine med. sand, roots	OL	Sand is red-brown	0	
	↓										
8	1	24	0830 S-4				S-4B (5-24in) PEAT - organic material, fibrous root Structure comminuted vegetative tissue	PT	Dense root system, wet	46.5	2.8
	↓										
	1	15	OU3-B2-SB07-0810			Gray-Brown	S-5 (0-15in) SAND, some silt, tr. gravel (coarse), fine sand, tr. Organics (roots)	SP-SM	Damp - lot of seashells	2.7	0.3
	1										
10	3	24	0840 S-5								
	1	24	OU3-B2-SB07-1012			Gray-Black	S-6A (0-6") Organic SILT	SM/ OL	No shells observed, no gravel, damp higher plasticity @ top than at base	1.8	0.7
	↓										
12	1	24	0850 S-6				S-6B (6-24) org. SILT at top, soft to very soft silty some fine sand, organics (roots)				
	↓										
	1	23	OU3-B2-SB07-1214			Black	S-7A organic SILT, some sand, root matter, soft, very soft	OL (?) SM	similar to above, damp	0	12.7
	6										
14	2	24	0900 S-7			Black	S-7B SAND (fine), some silt, dense material	SM			
	2										
	1	16	OU3-B2-SB07-1416			Black	S-8A (0-9") similar to S-7B	SM	9-14" - coarse sand interval, wet	0	0.3
	2					Black	S-8B (9-14")SAND & GRAVEL, coarse,subround gravel, f/c	SW-GW			
	1					black	Sand S-8C (14-24) similar to S-8A	SM			
16	4	24	0910 S-8				EOB 16' augers to 14'				

TYPE OF DRILLING RIG: CME 850 ATV TRACK-MOUNTED
METHOD OF ADVANCING BORING: 4.25" I D HSA 8 IN OD
METHOD OF SOIL SAMPLING: 3" SPOON, 18" DROP, 300 LB HAMMER (HYDRAULIC)
METHOD OF ROCK CORING:
GROUNDWATER LEVELS: 8.3' WATER LEVEL THROUGH AUGERS @ 0920
OTHER OBSERVATIONS: BACKFILLED W/ BENTONITE SLURRY

BORING NO.: B2-SB07

Tetra Tech NUS, Inc.



PAGE: 1 OF 1

BORING LOG FOR: RAYMARK – OU3- FERRY CREEK
 PROJECT NO.: N7491-0320
 LOGGED BY: TRACY DORGAN
 DRILLED BY (Company/Driller): ATL / MARK CHILDS
 GRD. SURFACE 5.5 FT.


TRANSCRIBED BY: FMD

ELEVATION FROM: Est. from topo. map

BORING NO.: B2-SB08
 START DATE: 8/12/97
 COMPLETION DATE: 8/12/97
 MON. WELL NO.:
 CHECKED BY: TD

DEPTH (FEET)	BLOW S PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA METHOD = [FID, (PPM)]
0	2	6"	OU3-B2-SB08-0002		Very Loose	Mottled Red +	Thick phragmites @ surface, phrag. roots below surface w/ some sandy silt matrix, trace glass fragments	SM	1st attempt – 1" recovery, phrag. roots blocked nose	
	1					Dark. Gray	from 0-4 "		re-try @ EOB. glass 0-4"	0.0
	1	24"	1720 S-1							
2	2	16"	OU3-B2-SB08-0204			Gray- Brown	SILT, trace fine sand, phragmites roots as well as finer plant roots noted.	ML	H2S odor very strong, Soft, basket fingers	0.0
	2								squeezing sample.	
	1	24"	1550 S-2	4ft. 2 in.						
4	1	24"	OU3-B2-SB08-0406	Peat			S-3A = 2" similar to above, S-3B = 22" PEAT, mostly phragmites roots + stalk fragments	PT	Wet - saturated	326
	1						in silt matrix			
	1	24"	1605 S-3							
6	1	11"	OU3-B2-SB08-0608	Silt			SILT tr. fine sand, few-little plant fibers and roots, also shell fragments and glass fragments (clear)	ML	Glass fragments - saturated	7.5
	1									
	1	24"	1620 S-4							
8	W.O.H.	17"	OU3-B2-SB08-0810				S-5A = 8" - similar to S-4 above. S-5B = 9" - silt. trace fine sand, no plant or shell frag.		Saturated	5.9
	W.O.H.						High mica content		1 lg. Phrag. Root in S-5A	
	1									
	1	24"	1628 S-5							
10	W.O.H.	18"	OU3-B2-SB08-1012							220
	W.O.H.									
	1									
	1	24"	1640 S-6				Tr. Shells and plant fibers marine sed. deposits		marine deposits	20
12	W.O.H.	24"	OU3-B2-SB08-1214							
	W.O.H.									
	1									
	1	24"	1650 S-7				tr. Plant debris – very fine, not whole (comminuted)			
14	W.O.H.	18"	OU3-B2-SB08-1416							28
	1									
16	1									
	1	24"	1710 S-8							

EOB @ 16'

TYPE OF DRILLING RIG:	CME-45 SKID RIG	
METHOD OF ADVANCING BORING:	4.25" I D HSA	
METHOD OF SOIL SAMPLING:	3" OD SPLIT BARREL DRIVEN WITH 300 LB HAMMER W/18" FALL	
METHOD OF ROCK CORING:	N/A	
GROUNDWATER LEVELS:	NOT MEASURED	
OTHER OBSERVATIONS:		
BORING NO.: B2-SB08		PAGE: 1 OF 1


BORING LOG FOR: RAYMARK – OU3- FERRY CREEK
 PROJECT NO.: N7491-0320
 LOGGED BY: KAYLEEN JALKUT
 DRILLED BY (Company/Driller): ATL / MIKE HAWKINS
 GRD. SURFACE 3.0 Ft.

TRANSCRIBED BY: FMD
 ELEVATION FROM: Est. from topo. map

BORING NO.: B2-SB09
 START DATE: 7/30/97
 COMPLETION DATE: 7/30/97
 MON. WELL NO.:
 CHECKED BY: TD

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CON SIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA METHOD = [FID PID]	
0											
	1/12 in.	21	OU3-B2-SB9-0002			brown	S-1A (0-6 in) SAND, fine, dry, loose, grass, roots, trace organic material	SP	top soil, grasses, dry	2.7	0
2	1/12 in.	24	1100 S-1			black	S-1B (6-24in) silty SAND w/ organic plant tissue, roots, phragmite stems, fine sand	SM	org. silt?, damp bottom	0	0
		23	OU3-B2-SB9-0204			black	S-2A (0-12in) org. SILT/PEAT-fibrous tissue, phragmite stems f/m sand fine.	OL (?)	dry @ top, damp at bottom	0	0
4	1/12 in.	24	1110 S-2			black	S-2B (13-24) SAND, some silt, f/m sand poorly graded. w/organics	SP	saturated at ~1', (interval only)	0	0
	1/12 in.	21	OU3-B2-SB09-0406			black	S-3A (0-12) SAND, some silt, f/m sand, poorly graded. w/organics	SP	wet	14.3	8.2
6		24	1120 S-3			brown black	S-3B (12-24) PEAT - organic material, fibrous	PT	can squeeze water out wet	0	0
	WOH	24	OU3-B2-SB09-0608			black	S-4A (0-10in) org SILT, some fine, sand, organic roots	OL	saturated, very soft	0	0
8	1	24	1130 S-4			black	S-4B (10-24) PEAT, organic fibers some silt, trace fine sand	PT	seashells	75.2	23.8
	WOH	23	OU3-B2-SB09-0810			black	S-5A (0-10in) similar to S-4A organic roots	OL		0	3.0
10	1	24	1140 S-5			black	S-5B (10-23in) silty fine SAND, some sand fine, tr. org.	SM OL (?)	dry, dense, crumbles, tr. seashells	1.0	2.9
	WOH	23	OU3-B2-SB09-1012			black	S-6 (0-23in) similar to S-5B tr. org.	SM OL (?)	no seashells	0	1.2
12	1	24	1146 S-6			↓					
	WOH	24	OU3-B2-SB09-1214			black	S-7 (0-24in) similar to S-6, few organic, fine sand, silty, fine SAND	SM (?) OL (?)	very soft @ top, dense at bottom	14.9	10.9
14	1	24	1200 S-7								
	WOH	24	OU3-B2-SB09-1416			black	S-8 (0-24in) similar to S-7 w/ tr. organics, tr. twigs	SM OL (?)	wet	45.3	8.9
16	WOH	24	1210 S-8								

EOB @ 16'

TYPE OF DRILLING RIG:	CME 850 ATV TRACK MOUNTED	
METHOD OF ADVANCING BORING:	4.25 IN ID HSA 8 IN OD AUGERS TO 14' SB TO 16'	
METHOD OF SOIL SAMPLING:	3" SPLIT BARREL W/ 300 LB HAMMER (HYDRAULIC) 18 IN DROP	
METHOD OF ROCK CORING:		
GROUNDWATER LEVELS:	1155 HRS WATER NO IN HOLE YET, CHECKED AGAIN - NO WATER ENTERED HOLE @	
OTHER OBSERVATIONS:	BACKFILL W/ BENT. SLURRY	
BORING NO.: B2-SB09		PAGE: 1 OF 1

BORING LOG FOR: RAYMARK OU2
 PROJECT NO.:
 LOGGED BY: T. DORGAN
 DRILLED BY (Company/Driller): Aquifer Drilling & Testing Inc./M. Harrington
 GRD. SURFACE ELEVATION: 7.3'

TRANSCRIBED BY: MES

ELEVATION FROM: NGVD-1929

BORING NO.: SB-312B
 START DATE: 01/21/99
 COMPLETION: DATE: 01/27/99
 MON. WELL NO.: MW-312B
 CHECKED BY:

DEPTH (FEET)	BLOW S PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA METHOD = [FID, (PPM)]
0							Soil Surface			
							No samples 0-2'			
2										
	10	0.5	OU2-SO-312-0204			Orange Brown	S-1A = 0.3' fine-medium poorly graded SAND	SP		
	5							SM/ML	Saturated	FID = 84 (methane?) PID = 0.0
	3	2.0				Dark Brown	S-1B = 0.2' fine SAND & SILT abundant root fibers			
4	7		1100 S-1							
	5	0.2	OU3-SO-312-0406		Soft	Dark brown	SILT – trace-few clay abundant roots and organic debris, not quite peat	OL / PT	Poor recovery	FID = 68 PID = 0.0
	3									
	7	2.0								
6	2		1115 S-2							
	1	0.0	1.2/2.0 OU3-SO-312-0608		Very Soft		Clayey, SILT, abundant roots and plant fiber. Trace fine		No recovery w/2 in. Re-sample w/3" spoon	FID = 111.6 PID = 13.1
	WOH						Sand, borderline peat.		w/baggy in nose, = 1.2' recovery	
	1	2.0	S-3							
8	1		1135 S-4							
	1	1.2	OU3-SO-312-0810				S-5A = 1.0' similar to above		PEAT=	FID-2092 PID-35.4
	1		-1302 + S-5B 0910'							
	2	2.0	-1300 = S-5A 0809'							
10	3		0910 S-5			Lt. gray	S-5B = 0.2' – SAND, mostly poorly graded Med. sand	SP	Saturated SAND=	FID = 1050 PID = 26.1
	7	0.0	OU3-SO-312-1012		No recovery	No Recovery	No Recovery	No Recov.	No recovery	
	2									
12	4	2.0	1320 S-6							
	5									
	15	0.8	OU3-SO-312-1214			Light Gray	SAND, mostly fine-coarse well graded sand. Trace silt, trace fine-coarse subrounded gravel.	SW	Saturated	FID = 80 PID = 0.0
	10									
14	11	2.0	1345 S-7							
	6									
	5	1.3	OU3-SO-312-1416			Olive-Gray	Mostly fine-med. Poorly graded SAND	SP	No structure noted.	FID = 20.7 PID = 0.0
	9		1410=DUP-01							
	11	2.0					Trace silt, trace subangular, fine gravel			
16	13		1400 S-8							

TYPE OF DRILLING RIG: Mobile Drill – B59
 METHOD OF ADVANCING BORING: 5 in.ID D&W casing to 14ft.bgs. Wash out & change water,telescope to 4 in.ID drive & wash casing
 METHOD OF SOIL SAMPLING: 2 in. split-barrel sampler driven w/a 140lb.hammer w/a 30in. drop
 METHOD OF ROCK CORING: NQ wireline
 GROUNDWATER LEVELS:
 OTHER OBSERVATIONS:

Tetra Tech NUS, Inc.



BORING NO.: SB-312B PAGE: 1 OF 8

BORING LOG FOR: RAYMARK OU2
 PROJECT NO.: _____
 LOGGED BY: T. DORGAN
 DRILLED BY (Company/Driller): Aquifer Drilling & Testing Inc./M. Harrington
 GRD. SURFACE ELEVATION: 7.3'

TRANSCRIBED BY: MES

ELEVATION FROM: NGVD-1929

BORING NO.: SB-312B
 START DATE: 01/21/99
 COMPLETION DATE: 01/27/99
 MON. WELL NO.: MW-312B
 CHECKED BY: _____

DEPTH (FEET)	BLOW S PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA METHOD = [FID, (PPM)]
16										
18										
20	22 28	1.0	OU2-SO-312-1921			yellow- Orange, red	Gravely, fine-coarse SAND, well graded	SW	Heavy oxidation in Bottom 4 in.	FID = 0.0 PID = 0.0
	19 30	2.0	1505 S-9			Orange in Bottom 4"				
22										
24										
	15 12	0.5	OU2-SO-312-2426			Yellow - orange	Similar to S-9 above	SW	Oxidation staining throughout	FID = 0.0 PID = 0.0
26	18 22	2.0	1525 S-10							
28										
30	8 7	1.0	OU2-SO-312-2931			Tan- Light	SAND, mostly fine poorly graded sand, trace-few silt	SP	minor oxidation & bedding noted	FID = 0.0 PID = 0.0
	15 18	2.0	1545 S-11			brown				
32										

TYPE OF DRILLING RIG: Mobile Drill – B-59
 METHOD OF ADVANCING BORING: 5 in. ID D&W casing to 14 ft. bgs. Wash out & change water, telescope to 4 in. ID drive & wash casing
 METHOD OF SOIL SAMPLING: 2 in. split-barrel sampler driven with a 140lb hammer with a 30 in drop
 METHOD OF ROCK CORING: NQ wireline
 GROUNDWATER LEVELS: _____
 OTHER OBSERVATIONS: _____

BORING NO.: SB-312B

Tetra Tech NUS, Inc.



PAGE: 2 OF 8

BORING LOG FOR: RAYMARK OU2
 PROJECT NO.: _____
 LOGGED BY: T. DORGAN
 DRILLED BY (Company/Driller): Aquifer Drilling & Testing Inc./M. Harrington
 GRD. SURFACE ELEVATION: 7.3'

TRANSCRIBED BY: MES

ELEVATION FROM: NGVD-1929

BORING NO.: SB-312B
 START DATE: 01/21/99
 COMPLETION DATE: 01/27/99
 MON. WELL NO.: MW-312B
 CHECKED BY: _____

DEPTH (FEET)	BLOW S PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA METHOD = [FID, (PPM)]
32										
34										
	11	1.2 2.0	OU2-SO-312-3436 Raining 1610 S-12			Tan Light Brown orange	SAND fine – med. Poorly graded sand, trace few silt	SP	Minor bedding	FID = 0.0 PID = 0.0
	19									
	21									
36	22									
38										
40	18	1.3 2.0	OU2-SO-312-3941 1625 S-13				Silty, fine poorly graded SAND	SM	↓	FID = 0.0 PID = 0.0
	26									
	33									
	31									
42										
44										
	5	1.5 2.0	OU2-SO-312-4446 1635 S-14				f-c well graded SAND, trace silt	SW		FID = 0.0 PID = 0.0
	8									
	11									
46	13					↓				
48										

TYPE OF DRILLING RIG: Mobile Drill – B59
 METHOD OF ADVANCING BORING: 5 in ID D&W casing to 14 ft. bgs. Wash out & change water, telescope to 4 in. ID drive & wash casing.
 METHOD OF SOIL SAMPLING: 2 in. split-barrel sampler driven with a 140 lb. Hammer with a 30 in drop
 METHOD OF ROCK CORING: No wireline
 GROUNDWATER LEVELS: _____
 OTHER OBSERVATIONS: 1-2' 99 d&w to 44', sample 44-46', secure borehole.

BORING NO.: SB-312B

Tetra Tech NUS, Inc.



PAGE: 3 OF 8

BORING LOG FOR: RAYMARK OU2
PROJECT NO.:
LOGGED BY: T. DORGAN
DRILLED BY (Company/Driller): Aquifer Drilling & Testing Inc./M. Harrington
GRD. SURFACE ELEVATION: 7.3'

TRANSCRIBED BY: MES

ELEVATION FROM: NGVD-1929

BORING NO.: SB-312B
START DATE: 01/21/99
COMPLETION DATE: 01/27/99
MON. WELL NO.: MW-312B
CHECKED BY:

DEPTH (FEET)	BLOW S PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA METHOD = [FID, (PPM)]
48										
50	4 8	1.5	OU2-SO-312-4951			light brown with orange streaks	Fine – med. Poorly graded SAND, trace silt	SP	Minor bedding	FID = 0.0 PID = 0.0
	15 12	2.0	0845 S-15							
52										
54										
	6 5	1.8	-5456			Light brown	FGR SAND, poorly graded	SP		FID = 0.0 PID = 0.0
56	7 8	2.0	1140 S-16							
58										
60	4 8	1.8	-5961			Light brown	FGR SAND, poorly graded	SP	Minor bedding	FID = 0.0 PID = 0.0
	11 13	2.0	1202 S-17							
62										
64										

TYPE OF DRILLING RIG: Mobile Drill – B59
METHOD OF ADVANCING BORING: 5 in. ID D&W casing to 14 ft. bgs. Wash out & change water, telescope to 4 in ID drive and wash casing
METHOD OF SOIL SAMPLING: 2 in. split barrel sampler driven with a 140lb hammer with a 30 in drop
METHOD OF ROCK CORING: NQ wireline
GROUNDWATER LEVELS:
OTHER OBSERVATIONS: D. Waylon logged S-16 through S-21

BORING NO.: SB-312B PAGE: 4 OF 8

Tetra Tech NUS, Inc.



BORING LOG FOR: RAYMARK OU2
 PROJECT NO.: _____
 LOGGED BY: T. DORGAN
 DRILLED BY (Company/Driller): Aquifer Drilling & Testing Inc./M. Harrington
 GRD. SURFACE ELEVATION: 7.3'

TRANSCRIBED BY: MES

ELEVATION FROM: NGVD-1929

BORING NO.: SB-312B
 START DATE: 01/21/99
 COMPLETION DATE: 01/27/99
 MON. WELL NO.: MW-312B
 CHECKED BY: _____

DEPTH (FEET)	BLOW S PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA METHOD = [FID, (PPM)]
64										
	7	2.0	OU2-SO-312-6466			Light Brown	FGR SAND, poorly graded	SP		FID = 0.0 PID = 0.0
	6									
66	11		2.0		1234 S-18					
	10									
68										
70	7	1.2	-6971			Light brown	FGR SAND and silty, FGR sand at bottom	SP	Minor Bedding	FID = 0.0 PID = 0.0
	19									
	31	2.0	1305 S-19							
	47									
72										
74										
	4	2.0	-7476			Light brown	FGR SAND, poorly graded	SP	Minor bedding	FID = 0.0 PID = 0.0
	12									
76	14	2.0	1333 S-20							
	29									
78										
80	7	1.8	OU2-SO-312-7981			Light brown	FGR sand, poorly graded	SP		FID = 0.0 PID = 0.0
	19		1425 S-21							

TYPE OF DRILLING RIG: Mobile Drill – B59
 METHOD OF ADVANCING BORING: 5 in ID D&W casing to 14 ft. bgs. Wash out & change water, telescope to 4 in ID drive and wash casing
 METHOD OF SOIL SAMPLING: 2 in. split barrel sampler driven with a 140 lb. Hammer with a 30 lb drop
 METHOD OF ROCK CORING: NQ wireline
 GROUNDWATER LEVELS: _____
 OTHER OBSERVATIONS: D. Waylon logged S-16 through S-21.

BORING NO.: SB-312B

Tetra Tech NUS, Inc.



PAGE: 5 OF 8

BORING LOG FOR: RAYMARK OU2
 PROJECT NO.: _____
 LOGGED BY: T. DORGAN
 DRILLED BY (Company/Driller): Aquifer Drilling & Testing Inc./M. Harrington
 GRD. SURFACE ELEVATION: 7.3'

TRANSCRIBED BY: MES

ELEVATION FROM: NGVD-1929

BORING NO.: SB-312B
 START DATE: 01/21/99
 COMPLETION DATE: 01/27/99
 MON. WELL NO.: MW-312B
 CHECKED BY: _____

DEPTH (FEET)	BLOW S PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA METHOD = [FID, (PPM)]
80										
	61	1.8	OU2-SO-312-7981			Light brown	Fine, poorly graded SAND	SP		FID&PID =0.0
	80	2.0								
82										
84										
	6	2.0	OU2-SO-312-8486			Light red brown	Fine – med. Poorly graded SAND	SP	No structure noted	FID = 0.0
	8									
	13	2.0								
86	34		1020 S-22							
88										
90	8	1.5	OU2-SO-312-8991			Red-brn Olive –	Similar to S-22 above for ~6" grades into a silty, fine Poorly graded SAND approximately 1 ft. sharp contact with Saprolitic schist in bottom 4 in.	SP SM	Fine bedding noted above rock contact. Roller bit (4 in) to 93', change water and clean out tub.	FID = 0.0
	13					brn gray				
	41	1.7	1130 S-23	Top of Bedrock				Bedrock		
	50/2			90.5'						
92										
							GNEISS. Biotite, muscoite, quartz mafic gneiss with Near vertical foliation. Numerous horiz. To high			
94		~2:00	C-1 = 93-99 PEN = 6.0 REC = 5.8 RQD length = 28 in RQD 39%			dark gray w/	angle fractures from 93-96.5'. Heavy oxidation staining and halo's, trace gouge.		Many fractures 45 & 90°	
		2:15				light gray			to foliation plane in axis.	
						white bands				
96		2:10							~10 gal. lost	

TYPE OF DRILLING RIG: Mobile Drill – B59

METHOD OF ADVANCING BORING: 5 in ID D&W casing to 14 ft bgs. Wash out & change water, telescope to 4 in ID drive & wash casing

METHOD OF SOIL SAMPLING: 2 in. split-barrel sampler driven with a 140 lb. Hammer with a 30 in. drop

METHOD OF ROCK CORING: NQ wireline

GROUNDWATER LEVELS: _____

OTHER OBSERVATIONS: FID-B.

BORING NO.: SB-312B

Tetra Tech NUS, Inc.



PAGE: 6 OF 8

BORING LOG FOR: RAYMARK OU2
 PROJECT NO.:
 LOGGED BY: T. DORGAN
 DRILLED BY (Company/Driller): Aquifer Drilling & Testing Inc./M. Harrington
 GRD. SURFACE ELEVATION: 7.3'

TRANSCRIBED BY: MES

ELEVATION FROM: NGVD-1929

BORING NO.: SB-312B
 START DATE: 01/21/99
 COMPLETION DATE: 01/27/99
 MON. WELL NO.: MW-312B
 CHECKED BY:

DEPTH (FEET)	BLOWS PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA METHOD = [FID, (PPM)]
96						Similar to above	Rock-type similar to above, GNEISS-PARAGNEISS? 45° angle fractures noted @ 98.25, 98.8 & 99.25 w/ white calcite x-tals & light green calcite deposition. Two horiz. Frac. W/oxidation stains at 100'			
		2:30								
98										
		2:00								
		2:30								
100			C-2 = 99'-106.2' Pen = 7.2' REC = 7.3' (picked up C-1 remnant) RQD length= 69.25" RQD = 65%							
		2:20								
102							Bedrock grading into a mica (biotite & muscovite) rich SCHIST from gneiss. High angle fractures parallel to Foliation w/oxidation & gouge @ 101-101.5. Connected To horiz. Fracture. Also hgh angle fracture w/mica Gouge @ 102.5 rock is soft, numerous jagged Oxidized fracture @ 103& 104.		Jagged Fracture along Crinkle folds, 100gallons lost in C-2. Lost H ₂ O	
		2:00								
		2:00								
104										
		2:15								
		2:15							Approx. 100 gall. lost in C-2. Lost H ₂ O return.	
106							Degraded and saphrolitic with multi. Fracture 105-106.5		Core/rock jammed ~106	
		2:30								
		2:45								
108			C3 = 106.2' – 109' Pen = 2.8' Rec = 2.45' RQD length = 21" RQD = 62%							
		3:30								
							Jagged, oxidized fracture @ 108 & 108.8 - inc. chlorite and trace garnet noted with depth		Crinkle folding noted	
		3:15								
110			C-4 = 109'-118.7' Pen = 9.7' Rec = 10.3' RQD length = 103"				Quartz vein (vuggy) with chlorite, pyrite noted ~0.5' wide @ 110.			
		3:00								
		3:00								
112							Low angle fracture w/oxidation @ 111.5'			
		3:15								

TYPE OF DRILLING RIG: Mobile Drill – B59

METHOD OF ADVANCING BORING: 4 in. ID drive and wash casing

METHOD OF SOIL SAMPLING: 2 in. split-barrel sampler driven with a 140 lb. Hammer with a 30 in. drop

METHOD OF ROCK CORING: NQ wireline

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:

Tetra Tech NUS, Inc.



BORING NO.: SB-312B

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BORING LOG FOR: RAYMARK OU2
 PROJECT NO.: _____
 LOGGED BY: T. DORGAN
 DRILLED BY (Company/Driller): Aquifer Drilling & Testing Inc./M. Harrington
 GRD. SURFACE ELEVATION: 7.3'

TRANSCRIBED BY: MES

ELEVATION FROM: NGVD-1929

BORING NO.: SB-312B
 START DATE: 01/21/99
 COMPLETION DATE: 01/27/99
 MON. WELL NO.: MW-312B
 CHECKED BY: _____

DEPTH (FEET)	BLOW S PER 6"	SAMP REC. / SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG./ WELL PROF'L	SOIL DENSITY/ CONSIS. or ROCK HARD.	CLR	MATERIAL CLASSIFICATION	USCS or ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA METHOD = [FID, (PPM)]
112										
		3:30	RQD by Pen length = 88%			Similar To above	High angle fracture along foliation w/calcite deposition @ 112'-113'. Numerous oxidized high angle fractures to 113.5'			
114		3:15	RQD by Rez. Length == 83%							
		3:45				dark gray green w/ white bands	Horiz. Fracture @ 115.5. High angle and 45° fracture @ 116'			
116		3:20								
		3:15								
118		3:25					High angle wavy fracture @ 118'.			
		3:50	C-5 = 118.7' - 122' Pen = 3.3' Rec = 3.3' RQD length = 33" RQD = 83%				High angle jagged fracture @ 119' and clean fracture @ 119.5			
120		3:00					High angle fracture with trace calcite deposit ~ 121-122'			
		3:25								
122		2:50								
		2:10	C-6 = 122'-124' Pen = 2' Rec = 1.4' RQD leng. 16.8" RQD by pen = 70% RQD by Recov.=100%				C-6 = solid core, similar rock type to above			
124		2:30					Left 0.6' stub @ EOB			
							EOB = cored to 124' open to 123.4'			

TYPE OF DRILLING RIG: Mobile Drill - B59
 METHOD OF ADVANCING BORING: 4 in. ID drive and wash casing
 METHOD OF SOIL SAMPLING: 2 in. split-barrel sampler driven with a 140 lb. Hammer with a 30 in. drop
 METHOD OF ROCK CORING: NQ wireline
 GROUNDWATER LEVELS: _____
 OTHER OBSERVATIONS: _____

BORING NO.: SB-312B


Tetra Tech NUS, Inc.



PAGE: 8 OF 8

BORING NO.:	SB-312S
START DATE:	2/3/99
COMPLETION: DATE:	2/3/99
MON. WELL NO.:	MW-312S
CHECKED BY:	

[illegible]

TYPE OF DRILLING RIG:	CME	
METHOD OF ADVANCING BORING:	5" ID Drive & Wash Casing	
METHOD OF SOIL SAMPLING:	2 in. split-barrel sampler driven with a 140 lb. hammer with a 30 in. drop.	
METHOD OF ROCK CORING:	N/A	
GROUNDWATER LEVELS:	N/A	
OTHER OBSERVATIONS:	Strong odor while washing out @ 8' bgs—the FID reading ranged from 2.6 to 15.1 PPM. Odor cleared after it was washed out	BORING NO.: SB-312S PAGE: 1 OF 1